GALGOTIAS UNIVERSITY

ADMISSION NUMBER

School of Biological and Life sciences

Bachelor of Science Honours in Biomedical Science
Semester End Examination - Aug 2024

Duration : 180 Minutes
Max Marks : 100

Sem IV - P1UC401T - Bioinstrumentation and Biotechniques

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	Define resolving power in the context of microscopy.	K1(2)
2)	What is agarose gel electrophoresis, and what types of biomolecules are commonly separated using this technique?	K2(4)
3)	" The resolving power of electron microscope is better than light microscope". Justify the statement.	K2(6)
4)	Explain the fundamental principle of electron microscopy and how it differs from light microscopy.	K3(9)
5)	Analyze the three main steps of a PCR cycle and the role of temperature changes in each step.	K3(9)
6)	Describe the key steps involved in Sanger sequencing, highlighting the fundamental principles that allow for the determination of DNA sequences.	K5(10)
7)	Compare and contrast Sanger sequencing with Next-Generation Sequencing (NGS) methods, discussing their respective advantages and applications in genomics.	K4(12)
8)	Discuss the principles behind scanning electron microscopy (SEM) and transmission electron microscopy (TEM), highlighting their differences and specific applications.	K5(15)
9)	Discuss the steps involved in a Western blotting procedure, including protein separation, transfer, blocking, and detection.	K5(15)
10)	Explain the fundamental principle and types of electron microscopy. Discuss the procedure of sample preparation for electron microscopy.	K6(18)